

WHAT IS CLAIMED IS:

1. A fastener for use in attaching wood panels to a metal substrate, said fastener comprising:

a shaft having a tapered tip at one end thereof and a head at a second opposite end thereof;

said shaft also having a pair of cutting flutes that extend from said tapered tip, a helical thread extending from adjacent said flutes to adjacent said head, and a pair of cutting wings projecting from the cutting flutes adjacent to said helical thread; and

said head having a top surface and a tapered surface extending away from said top surface toward said shank, said top surface having means adapted for engagement by a driving tool for rotating said fastener in a direction to cause said thread to screw into a substrate, and said tapered surface having a series of circumferentially spaced ribs adapted to function as cutting blades when the fastener is rotate on its own longitudinal axis.

2. A fastener according to claim 1 wherein said tapered surface extends from said shaft to said top surface.

3. A fastener according to claim 2 wherein said ribs on said head have a rectangular cross-sectional shape.

4. A fastener according to claim 2 wherein said ribs on said head have a triangular cross-sectional shape.

5. A fastener according to claim 1 wherein said head has a recess adapted to be operatively engaged by a tool for screwing and unscrewing said fastener.

6. A fastener according to claim 1 wherein each flute has a flat cutting surface extending lengthwise of said shaft.

7 A clip of fasteners for use in securing together two superimposed structural components, said clip comprising:

a plastic strip having lengthwise extending top and bottom surfaces and two opposite side surfaces, a series of mutually aligned holes in the strip with each hole extending perpendicular to and between said top and bottom surfaces, each hole having a plurality of inwardly extending fastener-gripping ribs and a web between each rib formed integral with said top surface, said ribs and said webs having inner portions that are aligned to define a circular opening, and

a fastener mounted in each of said holes, each fastener comprising a shaft having a tapered tip at one end and a head at its other, said shaft also having (1) a drill portion that extends toward said head from said tapered point, (2) a screw portion comprising a helical thread that extends from adjacent said flutes to adjacent said head, and (3) cutting blade means projecting laterally from said drill portion adjacent said screw portion, said cutting blade means extending radially from the axis of said shaft a distance greater than said helical thread,

said head of each fastener extending outwardly beyond the periphery of said shaft but having a diameter larger than the circular opening defined by said ribs and webs but smaller than the diameter of said holes, said head also having a top surface and a tapered surface, said top surface having means adapted for engagement by a driving tool for

rotating said fastener in a direction to cause said drill portion to drill a hole through two superimposed structural components and said threaded portion to screw into said the lower of said structural components, and said tapered surface having a series of circumferentially spaced ribs adapted to function as cutting blades for cutting through said fastener-gripping ribs and said webs when said simultaneously said fastener is driven down and rotated relative to said ribs and webs.

8. A clip of fasteners according to claim 7 wherein said cutting blade means comprises a pair of blades.
9. A clip of fasteners according to claim 8 wherein said ribs on the head of each fastener have a generally rectangular cross-sectional shape.
10. A clip of fasteners according to claim 7 wherein said ribs on the head of each fastener extend to and join the outer surface of the shaft of said each fastener.
- 11.. A clip of fasteners according to claim 7 wherein each head of each fastener has a recess adapted to be operatively engaged by a tool bit for rotatively driving said each fastener I
12. A clip of fasteners according to claim 7 wherein said strip is formed of a moderate density thermoplastic material.
13. A clip of fasteners according to claim 12 wherein said plastic strip comprises a polymer selected from the group consisting of polyethylene, polypropylene, and nylon.

14. A fastener clip for use in supplying fasteners to a driver tool, said clip comprising:

a plastic strip comprising top and bottom surfaces and a plurality of holes extending between said top and bottom surfaces, each hole having a plurality of circumferentially spaced fastener-gripping ribs extending lengthwise between said top and bottom surfaces and webs formed between successive ribs at said top surface of said strip, said ribs and said webs extending inwardly of said hole the same distance and together defining a circular opening smaller than said each hole; and

a series of fasteners each mounted in one of said holes, each of said fasteners comprising a shaft having a tapered tip at one end thereof and a head at a second opposite end thereof, said shaft also having drill section that extends from said tapered tip toward said head, a helical threaded section extending from adjacent said drill section to adjacent said head, and cutting blade means formed integral with and projecting radially of said drill section, said head extending outwardly beyond the periphery of said shank and having a top surface and a tapered bottom surface, said top surface having means adapted for engagement by a driving tool for rotatively driving said fastener, and said tapered bottom surface having a series of circumferentially spaced ribs adapted to function as cutting blades for cutting through said ribs and said webs when rotated under a downward axial force relative to said strip.

15. A fastener clip according to claim 14 wherein said drill section has two cutting flutes.

16. A clip according to claim 14 wherein said fasteners are disposed so that said heads have a maximum diameter less than the diameter of said holes.

17. A clip according to claim 14 wherein said fasteners are disposed so that said heads are elevated above said top surface of said strip.

18. A clip according to claim 14 wherein the maximum diameter of said helical threaded section is greater than the maximum diameter of the portion of said drill section but less than the diameter of the circle of rotation of the periphery of said cutting blade means.

19. A clip according to claim 14 wherein said strip is characterized by having six mutually spaced fastener-gripping ribs extending inwardly of each of said openings.